

## CLAIMS

1. A fixing heater control method for performing a power on/off control of a fixing heater;

wherein, with four consecutive half wavelengths (two cycles) of a power supply voltage employed as a period, two half waves are used for phase control and other two half waves are made full ON or full OFF for said fixing heater.

2. A fixing heater control method for performing a power on/off control of a fixing heater comprising first and second heaters;

wherein, with four consecutive half wavelengths (two cycles) of a power supply voltage employed as a period, two half waves are used for phase control and other two half waves are made full ON or full OFF for each of the first and second heaters and, at the same time, the phase control is performed complementarily to both the heaters.

3. The fixing heater control method according to claim 2, said method comprising the steps of:

sequentially detecting a temperature of the fixing heater to be heated;

determining to which temperature range the detected temperature belongs, wherein said temperature range is one of at least three temperature ranges generated by dividing a whole temperature range by at least two thresholds, and

allocating at least three power ON/OFF patterns, each having a different ON/OFF ratio, to said at least three temperature ranges for controlling said first and second heaters using the allocated power ON/OFF patterns.

4. An image forming apparatus having a fixing device for fixing a toner image on paper, said apparatus comprising:  
a fixing heater built in said fixing device;  
switching means that controls an application of an alternate current power supply voltage to said fixing heater;  
temperature detection means that detects a temperature of said fixing heater; and  
control means that, with four consecutive half wavelengths (two cycles) of the power supply voltage employed as a period, uses two half waves for phase control and makes other two half waves full ON or full OFF,  
wherein said control means controls said switching means based on the temperature detected by said temperature detection means.

5. An image forming apparatus having a fixing device for fixing a toner image on paper, said apparatus comprising:  
a fixing heater built in said fixing device and comprising first and second heaters;  
first and second switching means that control an application of an alternate current power supply voltage to said first and second heaters;  
temperature detection means that detects a temperature of said fixing heater; and  
control means that, with four consecutive half wavelengths (two cycles) of a power supply voltage employed as a period, uses two half waves for phase control and makes other two half waves full ON or full OFF for each of the first and second heaters and, at the same time, performs the phase control complementarily to both the heaters;

wherein said control means controls said first and second switching means based on the temperature detected by said temperature detection means.

6. The image forming apparatus according to claim 5, wherein said control means determines to which temperature range the temperature detected by said temperature detection means belongs, wherein said temperature range is one of at least three temperature ranges generated by dividing a whole temperature range by at least two thresholds, and allocates at least three power ON/OFF patterns, each having a different ON/OFF ratio, to said at least three temperature ranges for controlling said first and second heaters using the allocated power ON/OFF patterns.